Sample Grade 2 Unit—Temperature

Unit Introduction

In this unit, students:

- ☞ Explore concepts of temperature.
- ☞ Measure temperature with a Fahrenheit thermometer.
- ☞ Estimate temperature using benchmarks.
- ☞ Show what they learn with words, pictures, and models.

Assessment

A unit test in multiple-choice format is provided on page Assessment • 6.

KWL

Use a KWL chart to activate prior knowledge and set learning goals as a class. A reproducible KWL chart is provided on page BLM • 13.

Games for Practice and Review

Use the MeasureWorks Game Board to reinforce learning. Game rules begin on page BLM • 19.

Have students keep the KWL chart in their math folders and add to it as they work through this unit.

Focus on Vocabulary

benchmark (p. T-3)	degrees (p. T-1)	Fahrenheit (p. T-1)	thermometer (p. T-1)
Celsius (p. T-1)	estimate (p. T-5)	temperature (p. T-1)	

Write each vocabulary word on an index card. Have students use the words to make a poster or bulletin board. Encourage students to use the words by awarding points each time a word is correctly used in a sentence.

Heads Up!

Temperature benchmarks are subjective. Temperature words like *hot, cold, cool,* and *warm* are relative. This ambiguity may be frustrating for some of your second graders, who like to be exact and right.
Encourage students to use the warmth of their foreheads as the benchmark for *warm*. Have students put a palm to their foreheads. Whenever practical, remind them to compare the temperature of an object to the warmth of their own foreheads to determine whether the object is warmer or cooler.

Book Nook

That's Hot!

by
Alison J. Auch

2002: Compass Point Books

An easy-to-understand book about temperature and how a thermometer works.

Read a Thermometer

Planning Your Time

Intro & Demo	Activity	Sum It Up
15 min	25 min	5 min

Objective

Use a thermometer to read temperatures. Explore benchmark temperatures.

Materials

- Classroom thermometer
- Sliding thermometers
- Glass of ice water
- Glass of tap water
- Glass of hot water
- Red crayons

Grouping

Whole class

Open It Up

Place the classroom thermometer in a glass of ice water. Have students observe what happens to the red line on the thermometer.

Ask: Is the water cold or hot? [cold] How does the thermometer show this? [The red line goes down.] What is the temperature?

What do you think will happen to the red line if we put the thermometer in a cup of hot water? [The red line will go up.]

Demonstrate & Discuss

Display the classroom thermometer. Focus attention on the Fahrenheit scale.

Say: The higher numbers on the scale represent warmer temperatures. The lower numbers represent colder temperatures. Temperatures below zero are very cold and are read as so many degrees "below zero."

Write the following temperatures on the board and have students model them, when possible, on sliding thermometers:

normal body temperature: about 98°F
normal room temperature: 70°F
freezing point of water: 32°F
boiling point of water: 212°F

Discuss the meaning of each term.

Student Activity

Prepare ahead: For this whole-class activity, you will need the classroom thermometer and one large glass each of tap water, ice water, and hot water. Small groups will share sliding thermometers. Each student will need a red crayon.

Read the directions on the student page aloud to students. Place the classroom thermometer in a glass of tap water as students watch. Allow several minutes for the thermometer to adjust. Students predict the temperature of the water and show it on their sliding thermometers. Then they come forward in small groups to read the thermometer. They color the first thermometer on their worksheets to show the temperature of the water. Repeat for ice water and hot water. Then the class counts to 50 while you hold the bulb of the classroom thermometer in your hand. Students predict, read, and record as before. Finally, they write which temperature is the warmest.

Informal Assessment

As students work, encourage them to use the correct vocabulary: *thermometer*, *temperature*, *Fahrenheit*, and *degrees*.

Ask: Which temperature is warmer—body temperature or the temperature of tap water? How can you tell? [Body temperature is warmer. It is a higher number on the thermometer.] / OBSERVE /

Sum It Up

Say: Today we used a Fahrenheit thermometer to find different temperatures.

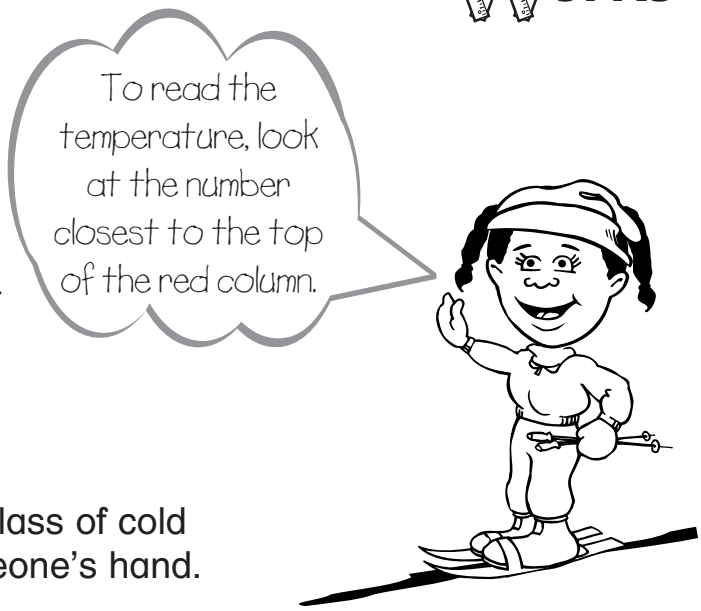
Ask: When is the red line near the top of the thermometer? [Sample: It is near the top when the thing being measured is very hot.] / GENERALIZE /

Science Connection

The thermometers most commonly used are liquid-in-glass types. The liquid fills a glass bulb at the bottom of the thermometer. The bulb is attached to a sealed glass tube that is partially filled with liquid. When the temperature goes up, the liquid expands and rises. Have students search the Internet to find what liquid most thermometers contain.

Name _____

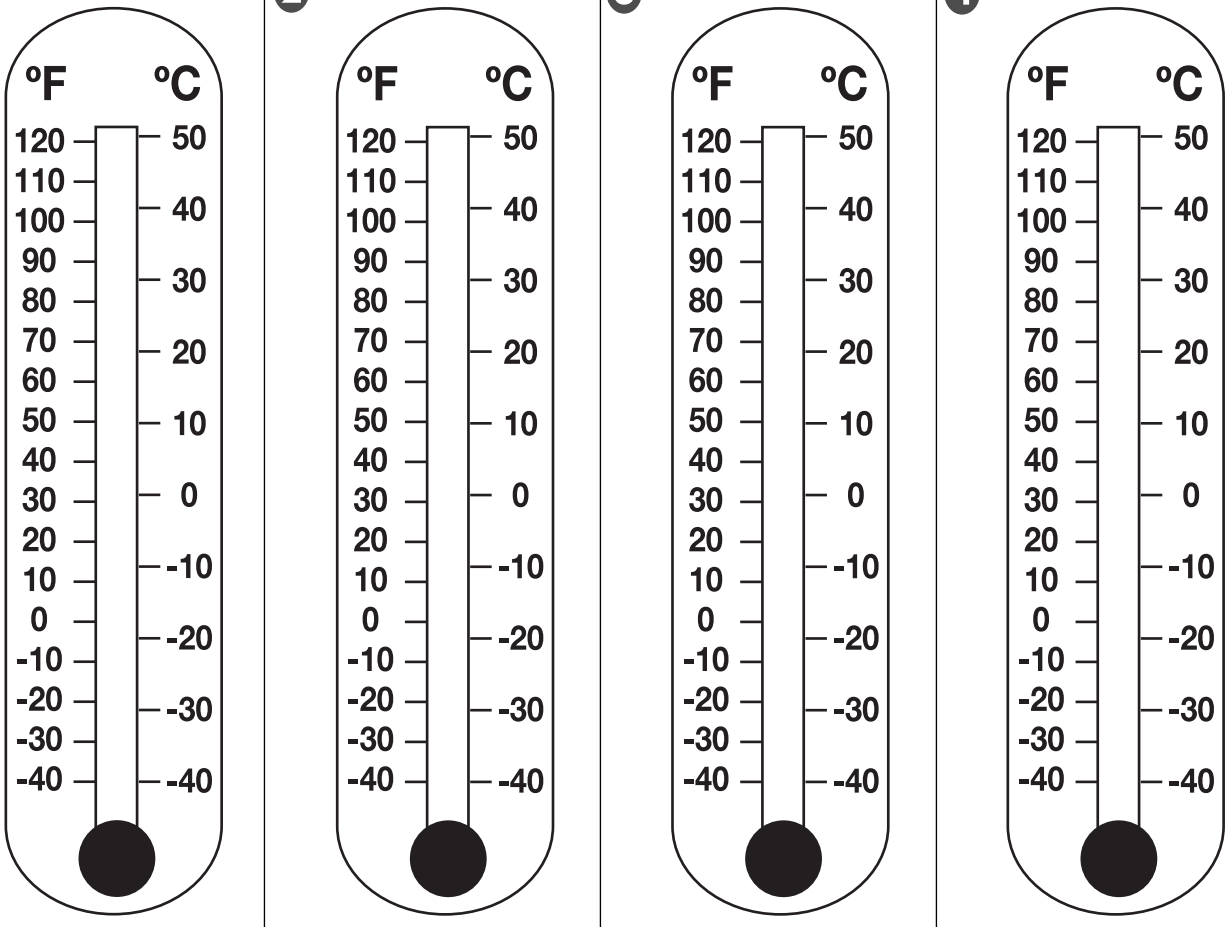
Which Is Warmest?



Try This

- Watch your teacher put a thermometer in a glass of tap water.
- On a sliding thermometer, show what you think the temperature will be.
- Read the temperature.
- Color to show the temperature.
- Repeat to find the temperature of a glass of cold water, a glass of hot water, and someone's hand.

Tap Water	Cold Water	Hot Water	Your Hand
1	2	3	4



Which temperature is warmest?_____